SCHOOL AND SOCIETY

EDITED BY J. McKEEN CATTELL

Volume 41 SATURDAY, JANUARY 12, 1935 Number 1046

CONTENTS

The Philosophic Element in Scientific Method: HENRY W. HOLMES 41

Hazards in the Measurement of Achievement: WALTER S. MONROE 48

Educational Events:
The Department of Education of the Deaf at the University of Manchester; The Place of Scientific Research in National Planning Programs; The Child Labor Amendment; Adult Education at Colgate University; The Financial Condition of the New York City Schools; National Council of Business Education; The Directorship of the American Museum of Natural History 52

Educational Notes and News 57

Discussion:
The Crisis in Education: NATHAN G. GOODMAN. *Standard Financial Reports in Higher Education:* GEORGE R. VAN DYKE 60

Special Correspondence:
College "Annuals": BURGES JOHNSON 62

Quotations:
A Tribute to J. W. Crabtree; George Pierce Baker 65

Reports:
Educational Planning and Coordination in California 66

Educational Research and Statistics:
Analyzing the Superior College Student: RUTH E. ECKERT 69

$5.00 A YEAR PUBLISHED WEEKLY 15 CENTS A COPY

THE SCIENCE PRESS

LANCASTER, PA. GARRISON, N. Y.

GRAND CENTRAL TERMINAL, NEW YORK CITY

Entered as second-class matter August 15, 1923, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879

The Social Understandings of the Superintendent of Schools

By FREDERICK H. BAIR, PH.D.

WHAT is the desirable relation between education and change in human affairs? Should the public schools of a democracy concern themselves with live and controversial problems involving economic, political, and social change? To what extent is the Superintendent of Schools equipped to answer these questions with statesmanship? These are questions explored by this study, which should be of interest to all school executives. CONTENTS: Section One: The Study, Findings and Implications. Section Two: A Summary of Replies to Thirteen Questions on the Social Views of the Superintendent of Schools and of His Reaction to the Harper Social Study. Section Three: A Generic Personal Portrait of the Superintendent of Schools—A Summary of Personal and Professional Data from 850 School Executives—Interesting Details Throwing Light upon the Superintendent as a Person.

Contributions to Education, No. 625. 193 pp. Cloth, $2.00

Bureau of Publications,
Teachers College, Columbia University, New York

THE OBLIGATION OF UNIVERSITIES TO THE SOCIAL ORDER

Addresses and Discussion at a Conference of Universities under the Auspices of New York University at the Waldorf-Astoria in New York November 15–17, 1932

The volume of proceedings presents the mature opinions, judgments, and feelings of many representative educators present at this Conference, and constitutes an authoritative expression of the most advanced thought of today, balancing in a striking manner the conservatism of the historical outlook with a frank recognition of the desirability and inevitability of modifications to meet the requirements of unprecedented future developments. The book is a challenge to all thinking persons who have any sort of interest in advanced education—and who has not?

500 Pages *$2.00*

NEW YORK UNIVERSITY PRESS
Washington Square, New York, N. Y.

A CONCEPT OF POETRY

A Critical Analysis of Poetry as a Basis for Educational Experience

BY
FREDERICK CHARLES GRUBER
Philadelphia, Pa.

Using concepts and definitions of poetry from Plato to the present time as a basis, the Author develops a concept of poetry as a creative act, as subject matter, as method, and as intensity of emotional experience, culminating in a scale of poetic intensity. Special stress is laid on appreciation and on poetry as the recreation of experience.

PRICE $2.00

DISTRIBUTED BY

THE SCIENCE PRESS PRINTING COMPANY
LANCASTER PENNSYLVANIA

SCHOOL AND SOCIETY

WITH WHICH ARE COMBINED THE EDUCATIONAL REVIEW ESTABLISHED IN 1891, THE TEACHERS MAGAZINE, ESTABLISHED IN 1878, AND THE SCHOOL JOURNAL, ESTABLISHED IN 1874.

Volume 41 SATURDAY, JANUARY 12, 1935 Number 1046

THE PHILOSOPHIC ELEMENT IN SCIENTIFIC METHOD[1]

By Dr. HENRY W. HOLMES

DEAN OF THE GRADUATE SCHOOL OF EDUCATION, HARVARD UNIVERSITY

I

THIS convocation celebrates the hundredth anniversary of a notable event—the first legislative enactment in America recognizing the professional preparation of teachers as a function of the state. I have been asked to speak on the contributions which have been made by means of experiment toward the advancement of a state program for the education of teachers, and to forecast, if I can, the place of experimentation in the further advancement of such a program.

If my theme confined me to a treatment of experiment under its completely scientific definition, I should have to be brief indeed. An experiment, in the scientific sense, is rigorously controlled; it proves a very special point, defined with such precision that the proof is not thereafter to be questioned—that is, of course, if the process of experiment has been successfully conducted: its importance turns on finding just the point on which experiment should bear. This finding of the crucial point is what I wish to emphasize. Let me take as an example Major Walter Reed's remarkable experiment, portrayed of late in that strange, fascinating play called "Yellow Jack." In this experiment the point at issue was inescapably defined and it was critical: Are germs of yellow fever introduced to humans by the bite of a mosquito or by some other means? All other means commonly considered or suspected to be possible means for transmitting the disease were allowed full play on the two volunteers who served as the control-group, whereas these two were carefully protected from mosquito bites. Two other volunteers were protected from contagion and infection but deliberately and carefully subjected to the bite of a mosqutio which had feasted on a yellow-fever victim. The former two escaped; the latter sickened. That proved the point. So far as I know, there is not a single point of controversy or difference of opinion which has arisen in connection with the education of teachers which does not still remain entirely untouched and unaffected by experimental procedure of this exact and rigorous character. We do not know enough about that complex condition which may be called, by analogy, "the teaching fever," to subject it to this type of scientific investigation. Its "germ" has never been isolated. Nobody knows how it may be cultivated or how to make sure that a given group or any individual shall catch it. In short, fully scien-

[1] An address delivered at the seventieth convocation of the University of the State of New York, on October 19, 1934, under the title "The Age of Experimentation."

tific experimentation bearing *directly* on a state program for the education of teachers has not yet begun and it may be a long time before it can begin.

Experimentalists, however, are a hardy and ingenious race. They certainly will give us, in the course of time, new ways and means of getting at our problems in this field with greater certainty. I doubt the possibility of ever making any of our controversial points so simple and so crucial as the point about mosquito bites in yellow fever; but the scientists, fortunately, are not limited to Major Reed's technique—the simple, final proof by trial, on a single point, with groups divided absolutely from each other on that one distinction. They have at hand statistical procedures to be used with larger populations and to cover more than one distinction at a time. My ignorance of such procedures is abysmal; but I have the strong conviction, based on social and historical considerations, that the experts should be trusted. The pseudo-scientists, whose worship of statistics as applied to education has often brought upon us scornful comment from our academic brethren, will soon be banished from the scene. We still may hope for scientific answers, in the proper sense, to many of the problems that confront us in the making of a teacher. But meanwhile we may usefully and fairly ask this question: If such a hope is ever to be realized, what conditions must be met?

The first requirement would seem to be some measure to rely on for determining the actual effectiveness of teaching; and here the trouble starts. The major difficulty lies in knowing what to measure. We wish to train or form a social and professional group—the teachers of a nation. How shall we know whether or not we are doing well at that important task until we can be sure of what it is that teachers are to do? Their situation in the classrooms, their acts as surveyed in a "job-analysis," the conditions under which they work (their salaries, *e.g.*, their tenure, pensions, professional associations and political attachments), the supervision of their labors and their organization into groups—all these matters are external to their purpose. The education of teachers must take cognizance of these things; they are not unimportant; but they are only means to the end or ends which teaching has to seek. Even methods or systems of teaching are still external. We can not tell whether any or all of these means toward good teaching should be given much importance in the professional preparation of teachers until we know what results teaching ought to achieve. This would seem to halt scientific investigation into the problems of a state program for the education of teachers at the very threshold. How can we do anything but go ahead by guesswork until we have argued about the aims of education long enough to be sure of what we are after? Are we not thrown back, right at the outset, into the arms of philosophy?

In a sense, we are; for the effort to be scientific does involve us in philosophy; and "The Epic of Teacher Education in America," which has been announced as the theme of this morning's session of the convocation, may be used as proof of that assertion. The discussion of the aims of education has never been more vigorous and realistic and productive in America than it has since we began to educate our teachers here; and the development of science as applied to education in the lifetime of the youngest in this audience (to say nothing of the rest of us!) has only made our philosophic discussion more pointed and more powerful and of greater value. When we begin to be scientific about anything there is in the long last no escape from being philosophic about it, also. Science proceeds by narrowing the issue and making a determined effort to smoke out the facts so that the issue may

be settled. Philosophy is an essential factor in the scientific process when we view it in complete perspective; *for the narrowing of issues is a philosophic undertaking.*

This is the sole contribution, if it be a contribution, which I have to offer to this morning's feast of reason: but I do believe it has enough importance to justify a brief elaboration of the argument.

My thesis is that scientific method needs the guidance of reflective thinking. We do not know what to be scientific about until we have thought carefully on the issues involved, so that our experimentation and our gathering and handling of statistical data may give us facts on the questions that really matter. This thinking about issues, when it is done with any thoroughness, is a far-reaching business which fully deserves the name of philosophy.

This conception of philosophic thinking might well prove to be acceptable to the scientists without being in the least acceptable to the philosophers. It seems to imply that philosophy has no business that is strictly its own. Reflective thinking is represented only as an element in scientific method, and if this should be held to be its one important rôle, then philosophy would be simply the handmaid of science; and the medieval view of the regal status of philosophic thinking would be completely abandoned. No longer queen, but only a humble servitor, philosophy would find a place of safety in the new economy of mental life and not a place of splendor. I must confess that such an outcome would not greatly disturb me, in spite of my own philosophic leanings; but I do not know that it is necessary to come to any conclusion whatever as to the relative importance or the final position on the battle front of our intellectual existence that shall be assigned either to philosophy or to science. There may be many a final task for philosophy to do and some truth that can be reached only by speculation and never by controlled experiment or the other exact procedures known to science. One would have to develop a complete theory of knowledge to deny to philosophy any clear field of its own, on which science has no claim. I do not here propose, therefore, to reexamine the Kantian distinction between pure reason and practical reason or to go over again any of the long argument about the relation between experience and logic. The implication that philosophy has nothing whatever to do *except* to help science in the clearing of its decks is not an implication to which I can subscribe. All I want to insist on is that there is a field for philosophic effort as an aid to scientific labors.

On one point, however, I should like to be perfectly clear, even at the risk of a seeming disloyalty to philosophy. On any issue concerning which there are facts which *can* be gathered, whether by experiment or simply by the longer and less formal process that we call experience, philosophic argument has no outcome that is anything but a guess. As to the ultimate nature of reality, neither experiment nor experience may ever be able to reveal to the mind the final truth. But as to problems of conduct, individual or social—as to all questions that may be put in the form "What is the best thing to do?"—either experiment or experience can presumably provide for us the final answer; and philosophy, therefore, can hardly do more than set up hypotheses —that is, preliminary guesses—on the basis of which we may organize experiments or watch for the results of experience. The only limitation that I can think of which ought to be admitted with respect to the finality of the facts when they appear is the possibility that in the face of some problems the facts never actually will appear—at least to any finite mind. (This is an Hibernianism which is probably clear enough for the purposes of the argument). This limitation may apply, of course, to some of our most difficult problems in edu-

cation. Shall we ever really know what anybody should be educated *for*? Perhaps the answer to that question can be revealed only to a Divine Mind, which knows all facts, past, present and to come. But we must struggle meanwhile with more limited problems on which the facts will often appear to our own minds or on which they can be made to appear by means of scientific investigation. While we wait for the answers which the facts can give—and of course in some cases this will be a very, very long time—we may properly act on the basis of what facts we know and what guesses we can make by philosophic thinking. Into our actual procedure may rightly enter some conclusions as to the values of life, its meaning and purposes, which have as yet no scientific validation. In short, as William James long ago asserted, we have the right to exercise the "will to believe," and when we do so, we set no limitations to science to which the scientist can properly object.

Out of our discussion and speculation, including our discussion of scientific method and of scientific results, comes that narrowing of issues which gives science its best guidance for the selection of points on which experimentation should be conducted or statistics gathered or instruments of measurement applied. There is, I believe, a necessary *mélange* of science and philosophy in all effective work in any of the larger fields of human interest and activity. I do not mean that every scientist ought to be a systematic philosopher or that every philosopher ought to be a competent scientist. I doubt if there are many people who can combine these two characters; and it is dangerous to try to be a Dr. Jekyll and a Mr. Hyde. But scientists and philosophers ought not to quarrel; on the contrary, they ought to cooperate. The scientist can think about what he ought to attack without being profoundly philosophic but also without scorning the mental processes by which the philosopher is able to suggest problems that should be studied by scientific method. The philosopher, on his part, ought to learn not to be dogmatic on any point concerning which the scientist has won a right to speak.

Now if the education of teachers can be attacked by science at all, it seems to me that we must have for a fairly extended period the most vigorous discussion we can get concerning the issues to which science, and particularly experimentation, should address itself. I do not believe such issues have been as yet effectively defined. I hope in a moment to make a beginning at an effort to define them.

II

First, however, I ought to remark that experimentation, and in general the scientific movement in education, has, of course, already contributed a great deal to the education of teachers. Perhaps it was expected of me that I should review what science has done to settle some of the problems of education and then draw conclusions as to the application of these results to the problems of teachers' colleges and normal schools. But that, I think, would be rather a perfunctory service. Is it not clear enough—does not practically every one concerned thoroughly realize—that we have had in this country in the last twenty-five years or more an amazing development in educational measurement, in the techniques of experimentation as applied to education, in laboratory techniques for the solution of educational problems and in the actual determination of education procedures as a result of scientific studies?

Let me take two or three main problems on which we have had scientific work that I know a little about. It is very easy to show that what has been done with respect to these problems must at once enter into the actual content of the education of teachers. Thus, the laboratory studies of

eye-movements in reading and of reading disabilities in general (I am naturally best acquainted in this field with the work of Professor W. F. Dearborn at Harvard, and I know it to be very notable and significant) have profoundly modified the techniques of teaching children to read and are likely to modify them still further in the future. Of course the training of teachers for positions in the primary grades must take full account of the experimentation and the elaborate physical and mental measurement that has gone into the building up of a scientific view of the teaching of reading. One can not exaggerate the possible importance of such work. Teachers in training ought to know as much about it as possible, and while they are studying it, they ought to argue (at least not *un*-philosophically!) about the aims and values of reading in the lives of their pupils. Or take the fundamental problem of nature and nurture in learning and their part in individual growth. The long-continued study of every aspect of individual development which has gone on at Harvard (again under the direction of Professor Dearborn) bears on that problem; and of course there have been a very large number of experiments and investigations throughout the country which have made some contribution to our present understanding of this vexed question. Teachers ought to know the scientific work which has been done in this field and they ought to review the arguments by which the issues have been narrowed. Similarly, scientific labors concerning the problem of the transfer of training should be known to teachers and the philosophic positions that may be taken with respect to that problem should be known to them as well.

I may remark in passing that with respect to any of the problems on which scientific advances have been made, we greatly need for the education of teachers summaries of scientific results and of current thinking. One of my younger colleagues, Professor P. J. Rulon, is engaged on such a summary of scientific work on the transfer of training.

But if it would be no great service to review the lines of inquiry which the scientists have pursued in education and blandly recommend that the results of their labors should be incorporated in programs for the education of teachers, it may nevertheless be worth while to insist that teachers who have been trained for their work without a profound infusion of science in their professional preparation are not really ready to teach in the schools of our time. By "a profound infusion," I mean a great deal more than a survey of the results of scientific work on educational problems. A well-prepared teacher ought to be fully competent to pass judgment upon the main features of a scientific investigation that touches the field of his special interest or that deals with a general educational problem with which he as a teacher may be rightly concerned. That means that no good teacher ought to be ignorant of scientific method. It means also that teachers in their preparation for their work should catch the scientific spirit. There is danger, of course, of scientificism in education; but true science will always drive out false science, and there ought to be in schools for the education of teachers enough discussion of educational problems of all sorts to make quite clear to every prospective teacher the limitations as well as the possibilities of scientific attack.

If experimentation has so far yielded nothing by way of direct determination of issues in a state program for the education of teachers, at least the whole scientific movement has advanced to a point where it must be adequately represented in the preparation of teachers if that preparation is to be truly modern.

III

But I should be leaving this topic without facing it squarely if I did not try to set forth at least a few issues in the education of teachers which ought to be narrowed by philosophic discussion and reflection until it becomes possible to make a scientific attack upon them. How that scientific attack shall be made, it is not my province to suggest. Experimentation may be possible on certain issues with respect to the education of teachers, although I presume that broader statistical procedures and probably the development of better measures for the effectiveness of teaching will come before experimentation.

I ought first to revert to what I said in an earlier passage of this address about the possibility that science can not get started in the study of the education of teachers until we know more exactly what the aims of teaching are. Actually, it does not seem to me necessary to wait upon philosophic discussion for an answer to the question "What is teaching for?" As I have already intimated, the final answer to that question may never come. What we do need to do is to get more exact definitions and better measures of as many of the outcomes of teaching as we can discern. Even though we can not compass by exact measurement all the results of teaching, if we can measure most of them *and make due allowance for those that remain unmeasured*, we can begin to be scientific about the issues involved in the education of teachers. (I am aware that promising beginnings have already been made; and it does not seem to me discouraging that they have not as yet gone very far.) We ought not to forget that measurement has already pressed forward into new realms. Something has been done in measuring interests and attitudes as well as knowledge. The further we go in conquering the unmeasurable by devising new methods of measurement, the nearer we are to being scientific about educational problems in general and hence about the problems of the education of teachers.

I find three major issues with respect to the education of teachers on which I believe we ought to have the best final decision that we can get by any means whatever. How soon we can make an attack upon these issues by scientific means, I am not certain. Let me set them forth so that you may yourselves be able to foresee the possibility of such a gathering of facts and such an interpretation of them as will lead to reliably scientific conclusions.

The first issue can be put in the form of a question, namely, "How much general education should a teacher have?" Let me assume that no one now doubts the desirability of at least some technical pedagogical training for teachers. That assumption is, I suppose, contrary to fact, for there are some people who see in the technical study of education nothing but a waste of effort and a futile care. But in this company, I shall not have to argue with such people. I may therefore take it for granted that in the training of teachers the study of education should begin somewhere and have a certain measure of importance. Have we not in this country begun it too soon and given it an undue importance? Committee Q of the American Association of University Professors has reported that the study of education amounts to very little anyway and that in the preparation of teachers in liberal arts colleges (where the committee clearly thinks they can best be prepared), not more than twelve semester hours of education should be included in programs preparing teachers for secondary schools. I should like to sharpen this first issue by saying that I believe the study of education should not begin at all until a sound general education has been acquired, wherever that point may be reached. Of course I believe most heartily in the study of education, and I think Committee Q's recom-

mendation has nothing to recommend it, being merely the grudging inclusion in the preparation of teachers of a little pedagogical patchwork. I also believe, however, that teachers should have as much general education as Committee Q pleads for—and probably more.

The narrowing of this issue involves, as you will see, some decision as to what general education is and when it can be finished. I believe we are moving toward a program which will assure broad views, sufficiently accurate knowledge and well-established habits of study at an earlier age than has heretofore been possible in this country. It may be that general education can be successfully completed for a large majority of capable students at twenty or twenty-one. I do not assume that it will have to be done by every one in a junior college or finished as a specific undertaking before some scholarly specialization is attempted. I do not assume that a teacher in the primary grades will need as much scholarship of a specialized kind as a teacher in a secondary school, but I do assume that we ought not to have in this country any teacher in any grade who has not really achieved a broad, sound, thorough, general education. And I would not begin technical pedagogical training until that goal has been reached.

Can we get any statistics or conduct any experiments which will test the validity of these conclusions? Quite obviously we need further general discussion of this issue before scientific attack on it can be made with much effectiveness.

The second issue to which I would call your attention may be put in this form: "Is any skill in methods, so called, possible or desirable, out of connection with knowledge of the subject in which it is to be taught?" I believe not. I believe that skill in teaching, although it has certain general aspects, should be developed in close connection with, and mostly after the achievement of, a thorough knowledge of the subject to be taught—far more thorough than has ever been achieved by a large proportion of the teachers of this country. I do not believe, incidentally, in courses in "professionalized subject-matter." I would have teachers study the subjects they are to teach freely, scientifically, philosophically, thoroughly, and then consider, under the guidance of master teachers, the way in which such subjects can be most effectively taught and the organization of the material of such subjects for teaching purposes and as parts of a curriculum.

Can we measure the effectiveness of teachers who have studied their subjects fully and thoroughly as against the effectiveness of teachers who are skilful in method but weak in their knowledge of what they are teaching? A wide statistical survey, based on comprehensive measures of efficiency in teaching, might possibly settle this point.

The third and last major issue to which I would ask your attention is perhaps more difficult to state. It concerns the place of a broad outlook on education in the purely professional part of a teacher's preparation. I can get at this matter with greatest economy of time if I make certain direct statements of my own convictions. I believe that technical studies in educational psychology, in the organization and conduct of schools, in the values and content of the curriculum, and in scientific techniques as applied to education, are essential parts of a teacher's training. But I believe that equally essential are studies of an historical, comparative, and philosophic character. Teachers ought to know what relation education bears to the life and destiny of a nation and of mankind in general. It seems to me possible to analyze the function of education thoroughly enough to develop in the minds of all leading teachers a social theory of education that is more than a list of pious hopes. If the teachers of a

country know what education implies and demands, will they not be able to stand firmly against political or economic doctrines that thwart the achievement of the ends the schools ought to seek? Is it not possible to discover a moral ground that teachers can bravely occupy in the discussion of political and social and economic issues? Teachers, I believe, ought to have a view of the values of life that is as much their own as is the religious view of such values that clergymen have or the political view of such values that statesmen have or the legal view that lawyers have. They ought to be so sure of their own minds that they can stand firmly in their professional associations for well-defined principles and without going out of their own sphere determine for themselves what should be taught in the schools. This does not imply that the responsibility for final decision on the curriculum should be taken away from the people acting through their legislatures or school committees. It does imply that the leadership exercised by teachers should be more positive. Teachers can not exercise a positive leadership in such matters, however, unless they have thought more deeply about them than mayors or representatives or school-committee members.

Is this conviction subject to scientific verification? I do not know. We must first try to produce a group of teachers who are capable of facing in the fullest way their complete social responsibility. For my own part, I think we must yet come to a general theory of the education of teachers which insists on a sounder basis of general education to begin with, a profounder knowledge of the subjects the teachers are to teach, an adequate command of all pedagogical techniques, including the techniques of scientific study, and finally, a social philosophy of education broadly based and carried over into well-defined and well-considered applications.

HAZARDS IN THE MEASUREMENT OF ACHIEVEMENT

By Professor WALTER S. MONROE
UNIVERSITY OF ILLINOIS

WHEN Rice reported his study of spelling at the meeting of the Department of Superintendence in 1897, the audience and the educational press were extremely hostile to the implied thesis that the outcomes of spelling instruction could be measured by administering a test. The beliefs and prejudices responsible for the antagonistic reception given to Rice's report were firmly embedded in the educational thinking of the time, and it was not until 1915, after a vigorous campaign to sell educational testing, that administrators and teachers were converted. To-day we have swung to the opposite extreme. In the wide-spread use of objective tests at the high-school and college levels, there is apparent a child-like faith in the efficacy of objective tests as instruments for measuring school achievement. Scores resulting from statewide or regional testing are being used as a basis for evaluating the efficiency of schools. Graduation from college is being based upon the results of comprehensive examinations. Objective tests are being used as a means of securing data for studies whose findings are utilized as a basis for important educational changes.

The present situation is hazardous. Educational writings, as well as current practises, reflect beliefs that are only partially justified. Administrative officials and teachers who are highly critical in their own fields have accepted the assertions of

measurement enthusiasts and do not appear interested in inquiring into the basic principles of educational measurement. A little knowledge has become a dangerous thing. It is the purpose of this article to point out certain beliefs that are apparent in the present situation and to show that they are not tenable. By way of alleviating somewhat the criticism, it may be noted that educational measurement is relatively new as a field of study and that the situation has been such that a person could easily add to his local or even national reputation by devising a new test or by reporting the use of an objective test. Many have yielded to the temptation that conditions created and have appeared in the rôle of measurement evangelists without first attempting a competent understanding of the basic principles of educational measurement. However, these conditions merely explain what has happened. They do not justify the present situation or detract from its hazardous nature.

I. *Objectivity in scoring is an essential requirement for a satisfactory test, and if a test is objective, the scores yielded by it may be considered highly accurate measures of school achievement.*

Studies of the marking of examination papers of the essay type by Starch and Elliot and by others revealed that different teachers will assign widely different grades to the same paper. The findings of such studies were very impressive and the interpretation was made that unless a test is objectively scorable, the resulting measures are grossly inaccurate and conversely that if a test is objectively scorable, the resulting measures are highly accurate. Although research has revealed that findings from the Starch-Elliot type of study give an exaggerated picture of the effect of subjectivity, the desirability of objectivity in scoring is apparent. This characteristic, however, is not essential for highly satisfactory measurement. A number of studies have shown that by exercising care in formulating the questions and by formulating instructions for grading, the reliability of measures yielded by essay examinations may be raised to a level not greatly below that of objective tests. Furthermore, as will be shown later, an objectively scorable test may be faulty in other respects. Hence, a test should not be considered a satisfactory measuring instrument merely because the scoring of pupil responses is objective, and a test which is not objectively scorable should not be condemned as a usable measuring instrument merely for this reason. In some situations an essay examination appears to be the superior type of measuring instrument.

II. *If a test has been shown to be highly reliable, the scores yielded by it are highly accurate measures of the achievement specified by its announced or implied function.*

The meaning of the term "reliability" as used in the field of educational measurement is derived from the coefficient of reliability which is obtained by administering two equivalent forms of a test to the same pupils and calculating the coefficient of correlation between the two sets of scores or by an equivalent procedure. The interpretation of a "coefficient of reliability" should be made through the probable error of measurement which is given by $\sigma\sqrt{1-r_{11}}$. In this expression, σ is the standard deviation of the distribution of scores from which r_{11}, the coefficient of reliability, is calculated. Hence, in a given situation the probable error of measurement, which is the median deviation of the variable errors of measurement, is influenced by the variability of the scores as well as by the coefficient of reliability. In other words, a coefficient of reliability can not be interpreted independently from the variability of the population from which it has been calculated. A reliability coefficient of .70 obtained from a relatively homogeneous

population, such as a group of pupils belonging to the same school grade, may indicate more accurate measures than are yielded by a test for which a coefficient of reliability of .90 is obtained for a population consisting of pupils from a sequence of four or five school grades.

The phrase "reliability of a test" implies that a given test has a definite degree of reliability. It follows from the preceding paragraph that many different coefficients of reliability may be found for a test. In other words, we should speak of the coefficient of reliability of a test only with reference to a particular population. Even in the case of a given group of pupils, the coefficient of reliability of a test may vary with the status of their achievement in the field of the test. The reliability is not a fixed characteristic of a test, and reference to its reliability is likely to be misleading. Even the probable error of measurement, which is generally assumed to be independent of the range of talent (variability of the population), is likely to vary slightly.

The coefficient of reliability of a test or the more stable probable error of measurement is concerned only with the variable errors of measurement. Neither of these indices has any connection with systematic errors of measurement or errors of validity. Hence, a high coefficient of reliability or a small probable error of measurement is not proof that the scores of a test are highly accurate measures of the specified achievement. The scores yielded by a test, whose coefficient of reliability for the population concerned is high, may be and not infrequently are grossly inaccurate measures of the achievement whose measurement is desired.

III. *A high correlation with a criterion is sufficient evidence to justify the use of the scores yielded by a test as highly accurate measures of the achievement considered to be defined by the criterion.*

The performance of a pupil is evidence of his ability to respond to the exercises of a test under the conditions prevailing at the time of its administration. Hence, the scores may be described as direct measures of the ability to respond to the test. Usually the achievement whose measurement is desired is not the same as this ability. When the scores are used as measures of some other ability, the process of measurement may be described as indirect. The measurement of temperature is indirect. The height of a column of liquid is measured and the result labeled "degrees of temperature." Experience has shown that within ordinary ranges no error is introduced by this substitution. Hence, in this case indirect measurement is satisfactory. The conditions of this illustration, however, are not comparable with those that usually prevail in the measurement of school achievement. The conditions in this case are more typically represented by the use of measures of height as measures of weight. It is obvious that such a substitution introduces variable errors which are called variable errors of validity. They are in addition to variable errors of measurement.

The correlation of the obtained scores with given criterion measures is an index of the magnitude of the variable errors of measurement plus the variable errors of validity. This coefficient of correlation, commonly called the coefficient of validity, is influenced by the range of talent, and hence can be interpreted only by considering it in conjunction with the variability of the population. Even when this is done, it is necessary to consider also the stability of a calculated coefficient of validity as a characteristic of a test, the dependability of the criterion and the possibility of other errors.

The point was made that the coefficient of reliability of a test probably varies for the same population. The coefficient of

validity is likely to be subject to much larger variations. Hence, a test should not be thought of as having a fixed validity. Even when allowance is made for differences in range of talent, a test that yields high valid measures in one situation may be a poor measuring instrument in another. It is misleading, if not distinctly inappropriate, to speak of the validity of a test as a fixed characteristic. It is less appropriate to speak of a given type of objective test as a satisfactory means of measuring achievement. Granting that a true-false test or other type of objective test yields highly valid measures of achievement in a particular situation, it does not follow that a similar test will yield equally valid measures in another situation or even in the same situation at a later date. The efficacy of indirect measurement depends upon the relation between what the test measures directly and the achievement whose measurement is desired. This relation is not fixed like that existing between height and weight, but varies with the general plan of the curriculum and the objectives towards which the instruction is directed. The objectives towards which students direct their efforts are influenced by the type of test administered to them, and hence if a given type of objective test is found to be a satisfactory measuring instrument when it is first used in a given course, it does not follow that it will continue to be equally satisfactory when used regularly. In fact, a given type of objective test is likely to become less and less valid as its use is continued.

Except in the case of prognostic instruments, the criterion measures employed in determining the validity of tests are themselves not completely dependable. Frequently they are distinctly unsatisfactory. If the coefficient of reliability of the criterion is known, correction may be made for variable errors of measurement, but a coefficient of validity may be in error due to the presence of variable errors of validity in the criterion measures. Achievement is seldom defined except by implication. Comparison of measures of achievement with intelligence test scores shows that in most cases what we call achievement includes as a large factor a portion of what an intelligence test measures. Our use of the term, however, frequently implies that achievement refers to the outcomes of instruction. From the point of view of this definition of achievement, the criterion which is employed in establishing the validity of a test frequently involves relatively large variable errors of validity. Furthermore, a coefficient of validity has no connection with systematic errors. Hence, the scores yielded by a test for which a high coefficient of validity has been found may involve large errors. In other words, a high coefficient of validity, as this index is usually determined, is not sufficient evidence that the test measures accurately the achievement whose measurement is desired.

The coefficient of validity calculated for a test is a statistic of uncertain value. At best it is a somewhat crude index of the combined effect of variable errors of measurement and variable errors of validity for a population exhibiting a certain range of talent and a certain relationship between what the test measures directly and the achievement whose measurement is desired. It gives no indication of the magnitude of the systematic error of measurement or the systematic error of validity that may be present when the obtained scores are used as measures of the designated achievement. In a typical case, a coefficient of validity should be regarded as a bit of information useful in making a judgment in regard to the validity of the obtained scores as measures of achievement. In no case should a calculated coefficient of validity be thought of as a fixed characteristic of a test or of a given type of test.

From the arguments of the preceding paragraphs, it follows that objectivity in scoring does not make a test a satisfactory instrument for measuring achievement, that a coefficient of reliability is an index of very limited significance, and that a high correlation with a criterion is not sufficient evidence to justify the use of the scores yielded by a test as highly accurate measures of the achievement considered to be defined by the criterion. In other words, the three beliefs commented on are not tenable. The wide-spread acceptance of them which is apparent in current educational writings and educational practise creates serious hazards in educational measurement.

The reader should not interpret this discussion as an argument for the abolition of objective tests as a means of measuring achievement. It is intended as a plea for a more intelligent use of objective tests and for a more critical interpretation of the scores obtained. It is the hope of the writer that he may contribute to stimulating administrative officials and teachers to be more critical of the assertions of measurement enthusiasts and to seek an understanding of the process of measurement and of the precise meaning of the terms used in describing the dependability of obtained scores as measures of achievement. Objective tests are not worthless as measuring instruments, but they are not as satisfactory as many people believe them to be. If we do not soon attain a more intelligent attitude toward them, it is inevitable that eventually there will develop an uncritical and extreme distrust of them. Meanwhile, serious mistakes will be made because persons using objective tests do not understand them.

EDUCATIONAL EVENTS

THE DEPARTMENT OF EDUCATION OF THE DEAF AT THE UNIVERSITY OF MANCHESTER

LORD LEVERHULME formally opened an extension of the Department of Education of the Deaf in the University of Manchester on December 5. The new department consists of a laboratory and lecture room, a sound-proof room, a control room and an annex, a clinic, and a workshop, and is specially designed for the training of teachers in schools in the British Isles and abroad. There is a constant demand for these teachers, and no student who has completed the course at the university in the last fifteen years has been unable to secure a teaching appointment. Modern devices have been installed to discover the extent and quality of deafness of those brought in for examination. Microphones of the same type as those used for broadcasting are fitted with suitable amplifiers, and in the classroom there is an apparatus with microphones in a mould of human ears, and each with its separate amplifier and telephone.

The vice-chancellor of the university, Sir Walter Moberley, presided at the opening ceremony. In his address Lord Leverhulme pointed out that it was only during the last two years that England had wakened up to the special needs of those who were afflicted with deafness. He said further:

> The Education Act of 1870 made education compulsory for all normal children. It did not debar deaf children from attending school. It merely ignored their special requirements. It was not until 1893 that an Education Act was passed relating to deaf children. Before that date the deaf child, unless its parents could afford private tuition, had to go to one of the residential charity organizations called asylums for the deaf.
>
> To-day the original asylums had become recognized schools under the Board of Education. Their number had been added to, and they were now equipped in many cases with playrooms, swimming baths and playing fields. Not only did they give the ordinary school education, but they provided training for a definite trade. One result was shown by the fact that, whereas 30 or 40 years ago the average workhouse contained many deaf and dumb adults, the number was now no greater than that for any other section of the public.
>
> Actually only a small percentage of people were

born absolutely deaf. After 500 tests with children at schools for the deaf at Old Trafford it was found that 70 per cent. of the children could hear sound, though they might not hear speech. This discovery was the result of the latest development in electrical hearing aids, and was one of the fruits of the research departments.

THE PLACE OF SCIENTIFIC RESEARCH IN NATIONAL PLANNING PROGRAMS

THE American Association for the Advancement of Science, meeting at Pittsburgh on December 29, passed through its council the following preamble and resolutions:

WHEREAS, Development and application of science have been basic to the economic and social progress of nations, making possible such movements as universal education, abolition of child labor and slavery, emancipation of women, insurance and pensions, moderate hours of labor and great improvement in the standards of health, comfort and satisfaction in living; and

WHEREAS, Scientific developments have not only conferred general social benefits, but in particular have been largely effective in leading to recovery from previous depressions—as the railroad industry following the depression of 1870, the electric industry following that of 1896 and the automobile industry following that of 1907; and

WHEREAS, Scientific research is a productive investment proven by experience to yield a high rate of return, as illustrated by the saving of $2,000,000,0000 per year from the Bessemer Steel process and of over $1,000,000 per day from the modern incandescent lamp, and as illustrated also by the entire chemical, electrical, communication, transportation and metallurgical industries and by the enormous employment in such industries; and

WHEREAS, Progressive foreign nations have recognized the importance of maintaining their scientific strength at a high productive level and have provided for their maintenance by allocation of funds to support scientific work on a national scale; and

WHEREAS, There now exists in America a situation demanding as never before an intelligent use of our national resources; and

WHEREAS, There are manifold problems in health, safety, agriculture, better use of resources, development of new products and processes whose social value and urgent need are unquestioned but whose solution is being seriously hampered by lack of funds for research, which have been greatly curtailed at this time when properly directed scientific work is more than ever needed; and

WHEREAS, The great national planning program, which is now under consideration for the use of our *physical* resources of soil, minerals and crops, will be seriously deficient unless it includes provisions for utilizing the *scientific* resources of the country for creative work; therefore, be it

Resolved, That aggressive governmental support of scientific work is essential to any sound program of building for the future national welfare, and is essential if this country is to do its full part in the further advance of civilization and if it is to enjoy its proper share in the benefits of this advance; and, be it further

Resolved, That copies of this resolution be sent to the President of the United States, to the members of his Cabinet and to the members of the Congress.

EDWARD L. THORNDIKE,
President

THE CHILD LABOR AMENDMENT

THE National Child Labor Committee has announced the organization of a National Non-Partisan Committee for Ratification of the Federal Child Labor Amendment in 1935.

Charles C. Burlingham, formerly president of the Association of the Bar of the City of New York, is chairman of the committee, which is composed of leaders in education, lawyers, industrialists, clergymen and civic leaders, who will seek to obtain favorable action on the amendment in the twenty-four legislatures having it under consideration in sessions already convened or about to open.

Twenty states already have ratified the amendment and it is hoped that similar action by another sixteen states will be taken in time to make possible the enactment of the amendment before the NRA codes expire, in pursuance with President Roosevelt's suggestion that such enactment would make permanent the child-labor provisions in the industrial codes.

The committee undertakes again to answer the two legal questions raised in a report of a special child labor committee of which William D. Guthrie is chairman. Lawyers serving on the 1935 non-partisan committee consider these objections untenable and approve the amendment on its merits.

The American Bar Association committee questioned first, whether the proposed amendment is still open for ratification by the states in view of the lapse of ten years since its pas-

sage by the Congress, and second, whether unfavorable action in the past by more than one third of the states can be reconsidered by those states and a vote cast for the amendment.

In a brief published by the National Child Labor Committee it is observed that Article V of the Constitution, if taken literally, gives an amendment "a deathless existence until ratification." It is added, however, that "no one argues that they are to be read literally." It then discusses the case of Dillon *vs.* Gloss in which it was contended that the Eighteenth Amendment was invalidated by the section providing that to be operative it must be ratified within seven years.

This argument lost in the Supreme Court and from Justice Willis Van Devanter's opinion, the child labor amendment advocates draw two conclusions: first, that amendments must be ratified within a reasonable length of time and, second, that whatever might be considered a reasonable length of time, it is some period greater than seven years.

Answering the second question raised by the committee of the American Bar Association, the pamphlet gives the case of the Fourteenth Amendment, which was ratified by North Carolina and South Carolina after rejections in those states by earlier legislatures. The point also is made that the Constitution says proposed amendments shall be valid when ratified by three fourths of the states and not "unless rejected by one fourth of the several states."

"The Constitution firmly calls for ratification," the argument continues. "From its words can be found no indication that this ratification must be at the time of initial action by the legislatures."

Members of the committee include President Karl T. Compton, President Harold Willis Dodds, Chancellor Charles W. Flint, President Henry Noble MacCracken, Dr. Henry Sloane Coffin, Dean Roscoe Pound, Professor Frank W. Taussig and Miss Grace Abbott.

ADULT EDUCATION AT COLGATE UNIVERSITY

A SERIES of ten lectures in social science is being given in Utica, N. Y., this winter before an adult audience by ten members of the faculty of Colgate University. This experiment in adult education is an outgrowth of the interest shown by adults engaged in non-academic pursuits in the material of the survey courses given at the university. The Social Science Survey is one of five survey courses that are an integral part of the "Colgate Plan." The first course was taught at Colgate in the year 1928–29. The last ones to be organized are now in their fifth year.

The scope of the Social Science Survey is defined as a study of social change as shown in some of the more important economic, educational, political and societal institutions in our modern social order. The course is designed: (1) to develop an appreciation of our society as a "going concern" of interdependent, interrelated institutions; (2) to make clear the essential characteristics of our more basic institutions, and (3) to point out the nature of social change and social problems.

The highlights of this course and other material have been adapted for adults into the following series of ten lectures. The organization of the series and the editing of each lecture to insure coherence and continuity in the series has been done by Professor T. H. Robinson, who is chairman of the Social Science Survey. The titles of the lectures and the names of the lecturers are:

"Factors in the Emergence of the Modern Order," E. W. Lyon, professor of history.

"The Economic Order" (1), J. M. Shortliffe, professor of economics and head of the Department of Economics.

"The Economic Order" (2), N. S. Buchanan, assistant professor of economics.

"Marriage and the Family," N. E. Himes, assistant professor of sociology.

"Recreation and the Problem of Leisure," G. B. Cutten, president of Colgate University.

"The Educational Order," E. Sanders, assistant professor of education.

"The Political Order (1)—The Political Process," R. L. Mott, professor of political science and director of the School of Social Science.

"The Political Order (2)—Governmental Trends," N. J. Padelford, professor of political science.

"Social Change and Social Problems," T. H. Robinson, assistant professor of sociology, chairman of the Social Science Survey.

"Social Reconstruction," E. G. Bewkes, professor of philosophy, director of School of Philosophy and Religion, chairman of the Survey Program.

Tickets for the lectures were sold at a nominal fee to defray the expenses of the lecturers. Over 130 tickets were sold before a limit was placed on the size of the group to prevent it from becoming unwieldy for questions and discussion which follows each lecture. The lecturer speaks for about fifty minutes, after which the meeting is turned into a forum for questions or discussion from the floor. The series started on Monday, January 7, and continues each Monday evening for ten weeks. Through the courtesy of Mr. H. B. Griffiths, of the Utica Public Schools, the meetings are held in the Utica Free Academy building.

THE FINANCIAL CONDITION OF THE NEW YORK CITY SCHOOLS

RICHARD TOMPKINS, writing in *The New York Times*, calls attention to a statement made by Governor Lehman in his inaugural address on January 1, in which he said that he would recommend in his budget message the full amount of state aid to the public schools, "because to reduce the amount suddenly at this time would inevitably either greatly increase real property taxation in the cities and on the farms or seriously affect essential activities of government."

The education budget under non-emergency conditions, however, would be $13,500,000 larger than it actually is for 1935 to restore curtailed services alone. Teachers' organizations are expected to seek a restoration of the salary cuts, amounting to $8,800,000, which went into effect in January, 1933. Provisions for these restorations are not included in the 1935 budget.

The committee on finance and budget of the Board of Education, when its estimate for 1935 was presented, pointed out that curtailed services had been reviewed with the hope that a restoration program might be supported. The committee felt that while city authorities were in full accord with the desire to resume a normal educational program only a small advance could be made in that direction during 1935.

The committee listed, for consideration, several additional items, amounting in all to $13,402,354. These include the reestablishment of a pupil-teacher ratio to 37.2 in the day elementary schools; to 34 in the junior high schools, and to 28 in the senior high schools. It also would provide for the resumption of regular appointments to fill vacancies and additional positions; restoration of evening schools to a 190-night basis; the reestablishment of summer schools, increased playground and recreational facilities, repairs and the purchase of additional supplies. It does not, however, take into account the extensions of services recommended in the thirty-sixth annual report of Dr. Harold G. Campbell, superintendent of schools, who believes that additional state aid will be required in 1935.

Mr. Tompkins states that the last academic year in which full statutory state aid was provided was 1931–32, when the New York City schools received $46,434,000 from the state. For 1932–33, although the schools were entitled to $48,556,000, they received $46,112,000, a cut of 5 per cent. For 1933–34 the normal amount would have been $51,059,000, but with a cut of 10 per cent. the sum of only $45,953,000 was received.

The amount of state aid for the present academic year will be $53,150,000 and if the full statutory amount is again provided for in the academic year 1935–36, the amount will be $53,905,000.

NATIONAL COUNCIL OF BUSINESS EDUCATION

THE semi-annual conference of the National Council of Business Education will be held in Atlantic City, N. J., on February 23, at the Hotel Claridge. The council meets in connection with the conventions of the Department of Superintendence of the National Education Association and of the National Association of Commercial Teacher Training Institutions.

The preliminary program follows:

6:00–7:30
Dinner.

7:30–8:30
Informal discussion of "Strategic National Educational Policies During the Next Decade." Leader: Dr. A. B. Meredith, professor of educational administration, New York University.

8:30–10:00
Reports of the six standing committees of the Council:

1. *Committee on National Policies on Business Education*, including federal and state legislation affecting business education. *Chairman*, F. G. Nichols, Harvard University; representative of the New England High School Commercial Teachers Association.
2. *Committee on Constitution and By-Laws. Chairman*, Albert E. Bullock, city director of Business Education, Los Angeles, California; treasurer of the National Council of Business Education.
3. *Committee on Membership in the Council. Chairman*, Helen Reynolds, Ohio University, Athens; secretary of the National Council of Business Education.
4. *Committee on National Emergency Problems in Business Education of Public and Private Schools. Chairman*, W. R. Odell, Teachers College, Columbia University; representative of the National Association of Commercial Teacher Training Institutions.
5. *Committee on Publications. Chairman*, Louis A. Rice, New Jersey State Department of Public Instruction, Trenton, New Jersey; representative of the Eastern Commercial Teachers Association.
6. *Committee on Teacher Helps. Chairman*, Imogene Pilcher, head, commercial department, Lincoln High School, Cleveland; representative of the Commercial Supervisory and Research Club of Greater Cleveland.

10:00–10:30
Business Session.

THE DIRECTORSHIP OF THE AMERICAN MUSEUM OF NATURAL HISTORY

DR. GEORGE H. SHERWOOD, director of the American Museum of Natural History, who had been in charge of the administrative and scientific affairs of the museum for more than a decade, resigned on January 1. He will give his entire time to the School Service Section as curator-in-chief of education. Dr. Sherwood has been made honorary director of the museum.

Dr. Roy Chapman Andrews, vice-director of the museum, explorer and naturalist, will succeed Dr. Sherwood as the active head.

Dr. Sherwood has been connected with the American Museum since 1902, when he became assistant curator of invertebrate zoology. From 1906 to 1911 he was assistant secretary; from 1911 to 1921 executive secretary, and from 1924 to 1926 acting director. He became director in 1927.

During the years of Dr. Sherwood's directorship, the museum has undergone rapid expansion. Akeley African Hall and the Whitney Hall of Oceanic Birds are well on their way to completion. A new reptile hall, with all the most recent methods of mounting and groupings was opened in 1929 and the Hall of South Asiatic Mammals, housing the collections of large Asiatic mammals collected by Mr. Arthur S. Vernay and Colonel J. C. Faunthorpe, a year later. Collections for the African Hall have gone steadily forward. Of the twenty-eight groups planned, half are finished or nearing completion. Last fall work was started on the new Hayden Planetarium, which will be ready in the spring.

The department of education, in which Dr. Sherwood has always taken a keen and personal interest, was conducted wholly within the museum up to 1904, when the first outside contacts were made through the distribution of nature study collections to the schools. Since then, the school work has expanded at rapid pace. Last year, more than 30,000,000 contacts were made with New York school children through lectures, films, lantern slides and circulating collections. During the past few years, Dr. Sherwood has pushed the educational work further and has established classes for teachers in museum instruction through cooperation with the College of the City of New York and New York University.

Dr. Sherwood is a native of Maine and attended Brown University where he took his A.B. in 1898 and A.M. in 1899. In recognition of his achievements for education he was given an Honorary Ed.D. by Brown in 1928.

Roy Chapman Andrews was born in Beloit, Wisconsin, where he, in 1906, graduated from Beloit College, and immediately came to New York and The American Museum of Natural History. In 1913, he took the M.A. degree from Columbia University. In 1918, he served in the Intelligence Service in China. He was awarded the Elisha Kent Kane Gold Medal of the Philadelphia Geographical Society previously given to only eight explorers. Brown University and Beloit College have both conferred on him the degree of honorary doctor of science. The Hub-

bard Medal of the National Geographic Society was awarded to him in recognition of his discoveries in Asia. Dr. Andrews is widely known as a lecturer and author of numerous popular books and articles on the results of his various expeditions. These include "On the Trail of Ancient Man," "Ends of the Earth," "Whale Hunting with Gun and Camera," "Camps and Trails in China," "Across Mongolian Plains" and a large volume covering his entire field work in Mongolia and China up to the present time, entitled: "The New Conquest of Central Asia."

EDUCATIONAL NOTES AND NEWS

ALAN CHESTER VALENTINE, master of Pierson College, Yale University, has been elected to the presidency of the University of Rochester to succeed Dr. Rush Rhees, president since 1900. Dr. Rhees, who is seventy-three years of age, requested in June, 1933, that he be relieved on or before June, 1935. The University of Rochester, which was established eighty-four years ago, has had only three presidents, Martin Brewer Anderson, David Jayne Hill and Dr. Rhees.

DR. C. A. HOWARD, superintendent of public instruction for Oregon since 1927, has been reelected to that office.

MISS GRACE ABBOTT, for thirteen years chief of the U. S. Children's Bureau, has been given the *Parents' Magazine* 1935 medal "for outstanding service to children." The award was made on January 4 at the close of a two-days' conference on the 1935 needs of children.

BRITISH birthday honors conferred on December 3 included knighthood on Dr. Edward Bagnall Poulton, Hope professor of zoology in the University of Oxford, and on Donald Francis Tovey, professor of music at the University of Edinburgh, who is known as an interpreter of the music of Bach. The Order of Merit was conferred on John William Mackail, of London, professor of ancient literature in the Royal Academy and from 1906 to 1911 professor of poetry at the University of Oxford, and Sir Josiah Stamp, the economist, London, was made a knight of the Order of the Bath. Sir Harold Mackintosh, Halifax, Canada, who is president of the World Sunday School Association, which has forty million members throughout the world, was elevated to a baronetcy.

THE HONORABLE DR. LEONARD J. SIMPSON, minister of education for Ontario, was elected honorary president of the Royal Astronomical Society of Canada at the recent meeting held in Toronto.

AT the recent annual meeting in Philadelphia of the Modern Language Association of America, the executive council elected as honorary members: Dr. Maurice Wilmotte, of the University of Liége; Dr. R. B. McKerrow, editor of *The Review of English Studies*, and Emile le Gouis, professor emeritus at the Sorbonne, Paris.

DR. NEVIN M. FENNEMAN, professor of geology and geography at the University of Cincinnati, was elected president of the Geological Society of America at the recent meeting at Rochester, New York.

DR. ARLEIGH B. WILLIAMSON, professor of speech and administrative chairman of the department of public speaking at Washington Square College, New York University, was elected president of the National Association of Teachers of Speech on December 29 at the nineteenth annual convention held in New Orleans.

DR. HARRY AUSTRYN WOLFSON, Nathan Littauer professor of Jewish literature and philosophy at Harvard University, was elected president of the American Academy for Jewish Research at the annual meeting on December 22. Other officers chosen were: Dr. Isaac Husik, professor of philosophy at the University of Pennsylvania, *vice-president;* Dr. Salo Baron, professor of Jewish history at Columbia University, *corresponding secretary;* Dr. Leo Jung, of New York, *recording secretary,* and William Gresser, of New York, *treasurer.*

DR. VIRGIL SLEIGHT, of Northwestern University, has been appointed to a position in the science department at Ball State Teachers College, Muncie, Indiana.

CHANCELLOR FREDERICK M. HUNTER, of the University of Denver, has been appointed to the

advisory council of the National Association of Student Editors.

DR. E. B. WESLEY, associate professor of education at the University of Minnesota, has been appointed chairman of the Committee on Citizenship of the Department of Secondary Education of the National Education Association.

DR. RALPH NOYER, dean of Ball State Teachers College, Muncie, Indiana, has been appointed secretary of the national council of Blue Key, a national honorary fraternity for college men.

DR. JAMES K. POLLOCK, assistant professor of political science at the University of Michigan, has been named by the Saar plebiscite commission to preside at one of the voting bureaus on January 13.

DR. JOSEPH D. MCGOLDRICK, professor of economics at Columbia University and formerly comptroller of New York City, has been elected president of the National Self-Government Committee.

DR. ANDREW FLETCHER OGLE, head of the department of education at the Eastern New Mexico Junior College, has resumed his work after being injured in an automobile accident which occurred while he was returning from the annual meeting of the New Mexico Educational Association.

HELEN KELLER and Dr. John H. Finley, of *The New York Times*, spoke at the laying of the cornerstone of the new building in New York City of the American Foundation for the Blind. The building, erected at a cost of $140,000, was presented by M. C. Migel, president of the foundation, in recognition of ten years of effective service.

DR. TYLER DENNETT, president of Williams College, will be the principal speaker at the exercises commemorating the birth of Abraham Lincoln, in Springfield, Ill., on February 12. Dr. Dennett will take for his subject "Lincoln and the Campaign of 1864."

THE Romanes Lecture at the University of Oxford will be delivered by Professor Gilbert Murray, Regius professor of Greek. The date and subject will be announced later.

D. M. RAE, principal of the Teachers College at Auckland, New Zealand, recently returned from a visit to educational institutions in this country, Great Britain and the continent. While in Melbourne Mr. Rae, who is a member of the recently established New Zealand Council for Educational Research, discussed the matter of securing full cooperation between the New Zealand Council and the Australian body.

DR. GEORGE PIERCE BAKER, from 1925 until his retirement in 1933 professor of the history and technique of the drama and director of the theater at Yale University, died on January 6, at the age of seventy years. Before going to Yale University, Dr. Baker had been for thirty-six years a member of the faculty of Harvard University, having been appointed instructor in English in 1888, assistant professor in 1895 and professor in 1905.

DR. FRANK STEWART KEDZIE, formerly president of Michigan State College, who had been associated with the college for most of his life, died on January 5, at the age of seventy-eight years. Dr. Kedzie went to the campus at the age of six, when his father, the late Dr. Robert Clark Kedzie, became a member of the faculty. He was graduated in 1877, became assistant in the chemistry department in 1880, instructor in 1883 and later head of the department. He became acting president of the college in 1915 and president the following year, continuing in that office until 1921, when he became dean of the newly created department of applied science. He retired in 1927, when the honorary position of college historian was given to him.

DR. CHARLES GEORGE SUEUR, professor of French and French literature and senior teacher at the Collegiate School, New York City, died on January 5, at the age of sixty-six years. He had been connected with the school, which is conducted under the auspices of the Reformed Protestant Dutch Church in New York, for forty-two years.

DR. FRANK ERNEST ROCKWOOD, professor emeritus and formerly dean of Bucknell University, died on January 2. He was in his eighty-third year. Dr. Rockwood became professor of Latin at Bucknell University in 1885, and held this position for the next thirty-two years, during the last twenty of which he also served as dean. In 1917, he was appointed professor emeritus.

DR. MALCOLM STORER, curator of coins and medals at Harvard University and the Massachusetts Historical Society, died on January 2, at the age of seventy-four years.

DR. ALFRED CHILTON PEARSON, professor emeritus of Greek at Cambridge University, England, died on January 2, at the age of seventy-three years.

THE University of Chicago Press issues a warning against an impostor who is reported to have called upon educators in different cities, presenting himself as a representative of the University of Chicago Press and soliciting manuscripts for publication. In at least one instance he has succeeded in cashing a check, which was later returned by the bank. In the several instances that have been reported to the press, the man has given his name as John Howard Marshall. The press states that it does not have on its staff any one by this name, nor does it make a practise of soliciting manuscripts by special representatives.

THE first meeting of the year of the New York City Gregg Shorthand Teachers' Association opens in New York City on Saturday, January 12, and will consist of a luncheon, meeting and a thé dansant. Mr. Seth B. Carkin, principal of Packard School, New York City, is chairman of the meeting. An address will be made by Dr. John Robert Gregg, author of the system bearing his name, on "Evolution of the Principles of Shorthand Construction in Various Countries; with Special Reference to the Inception, Birth, Development and Growth of Gregg Shorthand." In connection with the address, there will be an exhibition of early shorthand books, including the first edition and the first American edition of the Gregg shorthand system, together with early magazines, advertising posters and literature. The second speaker will be Mr. J. George Frederick, author of business books, lecturer, president of the Business Bourse, a research organization; founder and ex-president of the New York Sales Managers' Club, and formerly managing editor of *Printers' Ink*. Following the meeting, music will be provided by the Rosemont Orchestra and tea will be served to the guests.

The Western Journal of Education reports that the General Council of the California Teachers' Association met at Hotel Biltmore, Los Angeles, on December 7 and 8. There was a large attendance of prominent educators of the state. The council gave very careful consideration to the various suggested legislative measures, including tenure, to be acted upon by the next session of the legislature. Assistant Superintendent Arthur Gould, of Los Angeles; Superintendent Walter Bachrodt, of San Jose; Superintendent David E. Martin, of Alameda County; Superintendent C. B. Collins, of Imperial County; Deputy Superintendent Sam Cohn, of the State Department of Education, and others took part in the various discussions. Willard E. Givens presided over the meeting and Roy W. Cloud acted as executive secretary. In view of the fact that Mr. Givens has been appointed secretary of the National Education Association, with headquarters in Washington, D. C., he handed in his resignation to take effect on December 20. John A. Sexson, superintendent of Pasadena schools, was chosen to take Mr. Givens' place as president of the executive board, and Walter T. Helms, superintendent of Richmond schools, was chosen as a member of the board to replace Mr. Sexson.

TWENTY-SEVEN history students at Ball State Teachers College, Muncie, Indiana, took a 2,200 mile field trip during the Christmas vacation to visit historic scenes in the South. The trip was under the direction of Dr. Robert R. LaFollette, head of the department of social science. The states visited included Kentucky, Tennessee, Alabama, Georgia, South Carolina, North Carolina and Ohio.

THREE new state taxes, including general retail sales tax, are proposed by a committee of the Pennsylvania State Education Association as a program to aid public schools' support and relieve real estate. A committee, headed by Carmon Ross, president of the association, on December 26 laid the triple-tax program before the opening session of the annual convention, and stated that it will produce $62,000,000 a year revenue. The report recommends that one half of the anticipated revenue be used for increased aid to schools and the remainder for the relief of real estate. The three taxes as proposed by the committee are: (1) A general retail sales tax of 1 per cent., with certain ex-

emptions, designed to yield $24,000,000 a year. (2) A personal income tax, at progressive rates, which is estimated to produce $8,000,000 annually above the amount now obtained by a 4-mill tax on certain intangibles. (3) A franchise tax on incorporated and unincorporated businesses, including manufacturing and laundering corporations now exempt from the capital stock tax, to yield about $30,000,000.

IN his inaugural address to the Royal Statistical Society, London, held recently, the president, Professor Major Greenwood, discussed, according to *Nature*, the "Recent History and Function of University Education." Speaking of the statistical changes in the proportion of males in England and Wales who have entered upon a university course since 1801, Professor Greenwood estimated that at the beginning of the nineteenth century, when Oxford and Cambridge were the only English universities, about one half per cent. of males had a university education, a very slightly larger proportion at the middle of the nineteenth century and now about 2 per cent. In Germany, before the Nazi régime, it was estimated that not more than 3 per cent. of university students came from working class families. It is unlikely that the proportion is more than 10 per cent. in England and Wales. An author writing in the first volume of the society's *Journal* estimated that the universities of Great Britain had a total revenue in 1831 of £800,000 per annum; in 1931–32 their total income was £5,874,778, of which more than £2,000,000 came from Parliamentary grants.

THE *Journal* of the American Medical Association summarizes the results of a five-month survey of child health in New Jersey. Carried on as a CWA project by the state department of health under the direction of the child hygiene bureau, its purpose was to determine to what extent certain health protective measures had been employed in various parts of the state, such as medical health examinations, dental health examinations, immunization against diphtheria and vaccination against smallpox. In addition, data were obtained in regard to the incidence of certain contagious diseases among children of pre-school age. A total of 273,546 families were visited, from whom 59,311 completed questionnaires were obtained. It was found that 163,678 or 73 per cent. of the total number of families visited had no children under six years of age, to whom the survey was confined. The report shows that 354 communities in twenty-one counties were surveyed and that 24.6 per cent. of these communities had 30 per cent. of their children immunized against diphtheria; 18 per cent. had 20 to 30 per cent.; 31.4 had 10 to 20 per cent. and 26 per cent. had less than 10 per cent. of their children immunized. Two counties, Essex and Union, had, respectively, 75 and 65 per cent. of their communities with more than 30 per cent. of their children immunized against diphtheria. Essex County, the largest urban county, stands first in all three child health protective measures, presenting 46.1 per cent. immunized against diphtheria, 36.9 vaccinated against smallpox, and 82.2 who have had a physical examination. Warren County, rural, presents the poorest record in regard to diphtheria immunization, appearing twenty-first with but 6.5 per cent. immunized. Hunterdon County, rural, presents the poorest record in smallpox vaccinations, showing 4.5, while Cumberland County was poorest in child health examinations, presenting but 20 per cent. Of 205,473 children under 6 years of age, records show that 27.4 per cent. have been immunized against diphtheria, and 23 per cent. vaccinated against smallpox.

DISCUSSION

THE CRISIS IN EDUCATION

THE schools of the nation are fighting for their very life. Appropriations have been cut by states and cities, teachers' salaries have been pushed downward, while living costs have been rising, more work has been assigned the individual teacher. The decreased supply of necessary equipment, the increased size of classes,

the growing discontent among the overworked and underpaid teachers, must certainly show itself in the quality of the teaching process. Every child in America is the loser. Every parent who recognizes the glaring truth of the bad situation should pull his belt tighter and fight the forces that are undermining the American educational machine. Associations of real estate operators in various cities are clamoring for lower taxes. They are presenting their demands to school boards for tax cuts which, if made, will bring the work of the schools below every conceivable standard of decency. These men are blind to the fact that the whole problem revolves around the child. If we are not to train the child adequately even in times of economic crisis and economic revolution, then what are we to expect of the future? The child comes first.

We can still afford to give the child the kind of schooling of which this country has long boasted. There is still enough wealth between the Atlantic and the Pacific. Cuts have been made and cuts can still be made in supervisory overhead, in extravagance in school buildings and in departments of doubtful use, such as testing bureaus that annoy teachers and make inroads on the time of pupils and teachers through tests that are frequently of no or little value.

The teacher, with special and costly professional training, deserves a salary which will give him a comfortable home, an opportunity to keep up with the times through the purchase of magazines and books, a chance to enjoy good music and the theater, traveling, recreation and some free time for study.

Howard K. Beale's telling article on "Forces That Control the Schools" in the October issue of *Harper's Magazine* seems to us to be an accurate statement of existing conditions. We quote from this article a few key sentences:

> Among the noisiest, though not the most effective, outside pressures are those exerted by the so-called patriotic organizations. . . . They advocate huge armies, and navies, imperialism, isolationism. They tend to hold reactionary economic, social and political views. . . .
>
> The American press is one of the worst restraints upon schools. It is largely owned or controlled by wealthy and conservative men. Its keenness for news sometimes overcomes its desire to serve its masters. . . .
>
> Abundant evidence exists that schools and their teachers are often the football of politics. All too often attacks on schools, or something taught in them, or the conduct or views of their teachers, make excellent ammunition for the demagogue. . . .
>
> Labor, too, seeks to make teaching serve its purposes. . . . Unlike most pressure groups, however, labor has aided both the social studies and freedom in teaching. . . .
>
> Perhaps the most dangerous, because the most general and most subtle, control is that exercised by business. Business men dominate most school boards. . . . The influence of these business men gives them power over superintendents and teachers and subjects taught in the schools.

We call upon the teachers themselves to awake from their long-recognized lethargy and to fight openly for the schools. Mr. Beale is quite correct when he says: "Inertia, complacency, and indifference of teachers are among the worst enemies of the schools. Most teachers want above all else a chance to earn a livelihood in peace and quiet. They will yield to almost anything rather than have a fight. Often they grumble among themselves and protest—not too loudly, lest it be heard by somebody in authority."

Let them face the crisis in American education in the open. Then and only then will millions of American parents come to the rescue and fight for the schools with the ballot and otherwise. When a parent votes for a member of the legislature it is his duty to know how the candidates stand on the school question. Perhaps the schools would be helped and the child would be better protected if the teachers throughout the country presented their claims through unionization.

NATHAN G. GOODMAN

PHILADELPHIA, PA.

STANDARD FINANCIAL REPORTS IN HIGHER EDUCATION

THE National Committee on Standard Reports for Institutions of Higher Education has prepared its final report, and with the publication of this volume has completed its work. The committee was established for the purpose of developing principles and forms for accounting and financial reporting in colleges and univer-

sities. In pursuing its purpose the committee has attempted to achieve general uniformity both in the financial reports of educational institutions, and also in the reports required of them by federal, state and other governments, and by accrediting, statistical and controlling bodies.

The principles and report forms recommended by the national committee have appeared from time to time in separate bulletins, each dealing with one phase of the field of financial reporting. The material of these bulletins has been revised and enlarged for the new volume in the light of comments and criticisms received from a large number of financial and academic officers of colleges, from independent accountants and from others.

The work of the committee has received very favorable support. Approximately two hundred institutions now are employing, either in detail or in principle, the recommendations of the committee, and an examination of the published reports of colleges for the last three years indicates that this number is increasing. Educational associations and offices, also, have given hearty support to the work. The United States Office of Education, and the controlling bodies of colleges in the various religious denominations and groups have approved, and are employing, the committee's recommendations. Two state systems of public instruction now require all their institutions of higher education to follow the forms and principles of reporting outlined by the committee.

The final report of the national committee is a consolidated report, including all the material dealt with in the bulletins previously published, together with additional materials. The report covers such topics as the functions and unique characteristics of accounting systems for educational institutions, basic principles and terminology underlying institutional accounting and reporting; the annual reports of colleges and universities, *e.g.*, the balance sheet, statements of income and expenditures and statements of fund transactions; periodical report for internal administration; and account classifications. The volume is published and distributed by the University of Chicago Press, and will be available early in January, 1935.

GEORGE R. VAN DYKE

SPECIAL CORRESPONDENCE

COLLEGE "ANNUALS"

ABOUT $3,000,000 is spent annually in the United States by high-school and college students on the manufacture of "college annuals." A college annual is a curious survival of the old-fashioned "memory book" or "keepsake," formalized and standardized, generally ornate beyond all restraint of artistry, and frequently designed in fashions that will make it most expensive to manufacture. Like many other undergraduate enterprises it has been stimulated and in some cases kept alive by commercial printers and engravers who benefit from its continuance.

It is safe to assert that in scores of colleges to-day the book is insolvent without knowing it. In scores of colleges its accounts (if any are kept) show a deficit, despite the fact that one or two students connected with it have pocketed a profit. In scores of colleges inexperienced boys are handling funds ranging from two to twenty-five thousand dollars annually, collecting the money in unbusiness-like ways, expending it upon an inefficiently and extravagantly planned book, and receiving no supervision from any competent or experienced adult; while administrators who smugly remark that the boys are "learning by experience," shut their eyes to the fact that experience may teach bad method as well as good.

These statements are based upon a mass of correspondence from college administrators and students; and from printers, engravers and photographers who are to-day engaged in selling their services to inexperienced boys. A specific picture will serve to illustrate the type of situation that still commonly exists, though I like to think that each year cleans it up a little more. That it was not utterly cleaned up long ago is a commentary upon administrative efficiency in our colleges.

An annual is published at a retail price, let us say, of $6.00, because that is all the campus traffic will bear. The actual manufacturing cost of each copy is $7.00, because of the general undergraduate desire to "keep up with Lizzie."

On each copy sold there is, therefore, a loss of $1.00, and on each copy given away or unsold a loss of $7.00. This deficit is made up in part by receipts from advertising, but the bulk of it is secured by a tax upon fraternities and sororities and campus organizations which have pictures and write-ups in the book. This tax may rise as high as $25.00 against the larger organizations.

As to advertising: space in such a book does not offer great advertising value. Student solicitors are encouraged to use unethical "high power" salesmanship. The circulation of the book may be over-stated. The advertiser is told that unless he buys space he will lose campus good-will.

As to the tax upon campus organizations: Since the book purports to be a complete picture of campus life, it is a question whether the editors would or ought to omit the picture of any important organization which fails to pay the tax. It has been the case that women's athletic organizations were taxed for pictorial representation, while the men's were not. The retail cost of the annual, and the amount of tax necessary to balance the book's account are questions for the whole student body to decide; but they are in fact determined by the editor and manager of the book itself.

Obviously these weaknesses of management are not common to all college annuals. But there is to-day wide-spread inefficiency and mismanagement, due to inexperience and sometimes to outright venality.

Bribery is an unpleasant word to use in connection with college activities, but I have not taken the time to grope around for a pleasanter one. A printer visiting my office the other day who has only recently begun to try for some of this college annual business said: "I am not used to that method of getting contracts, and perhaps I am too old to begin. I had inquiries from the student editors-in-chief in ——— College and ——— University (mentioning two eastern institutions of good repute) and in each letter I was asked how much I would pay the writer if the contract were turned my way."

Last year the president of another concern wrote that he was glad to learn that an administrative officer would close all contracts, since it had been a very expensive proposition to deal with groups of students. He figured that the cost of dealing with them ate up 15 or 20 per cent. of all profits. He was therefore pleased to offer me, *if I sent the business his way*, 15 per cent., for me to use personally in any way that I saw fit! At the same time another letter came from the vice-president of the firm congratulating me upon my exposure of bad conditions throughout the colleges which long ago should have been ended. I replied by sending to him a copy of his president's letter, and received from him an expression of sincere regret, and the explanatory word that it was "hard to teach an old dog new tricks." Last year a concern widely experienced in the manufacture of college annuals approached our student editor-in-chief with the offer of a considerable sum of money if he would see that the contract "came their way." No gesture of invitation had been made, and it is natural to assume that this concern found that this method was the most effective way of doing business among the colleges. If further evidence is needed as to the prevalence of such conditions, enter into conversation with competing printers, engravers and photographers and find the extent to which they bring charges against one another. Some admit that they used to do it, but have given up the habit. Some admit that their traveling salesmen may make such offers without authorization.

Photographers have perhaps been worse than printers and engravers. A photographer securing the contract for taking pictures of each junior or each senior is in the fortunate position of having five hundred or a thousand customers regimented up to his studio to have a satisfactory portrait made. Any photographer would pay a considerable commission to bring this about. Many have done so. It has been customary for the successful photographer to agree to provide the editors with one free print of each student for use in the book. The photographer is then free to solicit business from these students and may get many private orders, with a gross business running up into thousands of dollars. A favorite method of securing the contract is to offer to pay the student manager or editor a commission on this private business, which he may put in his own pocket. Another

common method is to charge each student, who is compelled to have a picture taken, a sitter's fee, and this the photographer divides with the student editor or manager.

It is waste of time and space to continue any detailed account of the petty grafting which has developed in connection with the college annual business. It has gone on for a good many years and is being cleaned up here and there, generally by the drastic method of having an administrative officer or alumnus take over the management of the publication; an acknowledgement that conditions have been bad and can not be rectified except by such an arbitrary method. The idea that the managing of a five- or ten-thousand dollar student publication might be utilized as a "project" in the teaching of accounting does not seem to be popular. Perhaps it is too much trouble.

In many colleges the problem of financing the annual has been solved by requiring every student to purchase a copy and authorizing the college treasurer to collect the retail price from each student. Some of these colleges, after they have collected this large sum of money, turn it over to the editors of the book, who may then spend it foolishly, even though they go through the motions of submitting their accounts to some faculty adviser. In other words, each student is compelled to buy such a book, whether he wants it or not, and administrators do not then insist that the book shall be worth the money.

At Syracuse University, after some close study of this problem, a new plan has been put into effect and is now in its second year of operation. The first year proved a complete success and has resulted in a College Annual which costs $3.00 at retail, and is quite as effective and more artistic than books formerly costing the individual student $5.00 or $6.00; even in a year of depression there was a sufficient margin of profit to allow each editor a salary payment after the book's accounts were balanced.

First of all, the administration stated that if any Annual editorial board wished to make use of the university offices, the university name, solicit advertising as a recognized activity of the campus and solicit subscriptions at the time of registration, they must either reorganize along certain lines or else provide bonds signed by themselves and their parents. The students made it evident that they desired to have such a publication continued, with administrative cooperation. The conditions imposed were as follows: First, that one class, preferably the juniors, should pledge themselves to back the book by requiring every member to purchase a copy, but this must be by student action and not by administrative compulsion. Editors must be selected upon the basis of experience. Students applying for a place on the board should indicate experience on high school annuals or other publications and give proof of high character. A selecting committee of representative students and one administrative officer would review the applications and select a board of ten, which should immediately choose its own chairman and manager. A budget should then be prepared, based upon subscriptions of $3.00 per book already assured by reason of the class action; plus any other subscriptions that might have come in from other classes; plus a conservative estimate of receipts from advertising and a greatly reduced tax upon campus organizations. With this total sum of money assured (amounting last year to approximately $5,000) four reputable printers experienced in college annual manufacture were invited to submit dummies indicating the finest quality of book that each would make in the desired quantity for $4,500, the printer to be responsible for all costs of engraving and binding. The competition therefore between printers was in ideas submitted rather than in competitive prices, since that figure was predetermined. Photographers were found who were glad to provide sittings for eight or nine hundred juniors without sitter's fee and provide one free print to the editors of the book, with the understanding that they could solicit private orders to their heart's content and pay commissions to no one.

The plan has worked with complete satisfaction and is now under way for a second year. Students are again assured of a fine book for $3.00. The business manager has no bills to pay except the one bill to the manufacturing printer, and a few very small items for stationery and the like. The actual contract with this printer is signed by a representative of the administra-

tion, who then withdraws from the picture except as an interested observer. There is no possibility of bribery and corruption, and every opportunity is provided for students to get editorial and business experience without a climax of tragedy at the end of the year.

BURGES JOHNSON
SYRACUSE UNIVERSITY

QUOTATIONS

A TRIBUTE TO J. W. CRABTREE

IN his administration of the association, Secretary Crabtree has had some fundamental elements of policy to which he has consistently held:

First, *democracy in education;* the idea that educational policy should depend upon the rightness of ideas and upon established facts rather than upon sheer authority, and that in determining policies, every member of the profession should contribute.

Second, *teacher participation;* the idea that by working on their problems and having a share in determining policies teachers would enjoy a larger satisfaction in their service.

Third, *complete enrolment of the profession;* the belief that if the more far-sighted teachers, principals and superintendents would attach importance to the matter of professional organization, all teachers would be so aroused and awakened that they would gladly give support to professional organization.

Fourth, *faith in interpretation;* the belief that in bringing about changes it is better to depend upon goodwill, interpretation and cooperation than to resort to force or unreasonable pressure.

Fifth, *the autonomy of the association's departments;* the belief that each department should be in charge of its own affairs and should move forward as far as its own experience and leadership are able to carry it.

Sixth, *the autonomy of the states;* the belief that the state education association, like the state itself, has a sovereignty of its own and should be looked to for leadership in matters concerning education within the state.

Seventh, *the development of committees* to work on the association's problems and represent the entire country.

Eighth, *the development of the headquarters staff as a service agency* responsible to the Representative Assembly and the profession as a whole.

Mr. Crabtree has always had a deep interest in the classroom teacher. He is by nature a great commoner with a deep love of people and a clear understanding of their interests and needs. He has always been concerned with the efforts to improve the salaries and status of teachers and in his leadership of association policy he has placed great emphasis on efforts in this direction. In the development of the headquarters staff, he has sought to exemplify those professional practises which the association advocates for teachers everywhere, so that the headquarters stands to-day as one of the best examples in the country of good practise in the matter of salaries, retirement and freedom of expression.

The personal qualities which have accounted for Mr. Crabtree's success are the typical virtues of the American pioneer. His daily habits are marked by simplicity, modesty and patience. His flexibility of mind is greater even to-day than that of most young men. He has an immense capacity for friendship and a loyalty to the purposes and plans of the association which he has always put above any personal wish of his own.

The association as Mr. Crabtree leaves is in fine financial condition. He passes on to his successor an organization ready to take up the new and even larger responsibilities of the years ahead. Mr. Crabtree leaves his work as secretary strong, hearty and happy, with confidence in the association, with faith in the ability of the man who is to succeed him, with readiness to be of service in any way that he can in his new relation to the association.—*Joy Elmer Morgan in The Journal of the National Education Association.*

GEORGE PIERCE BAKER

WHEN Professor George Pierce Baker cordially agreed about thirty years ago to let some

of his students submit plays instead of theses in fulfillment of the requirements of his English course at Harvard no one foresaw the influence he would eventually have on the American theater. There was nothing of the aggressive, self-conscious pioneer about him. Since some of the ablest students at Harvard in those days shared his enthusiasm for the theater, a course in the drama under his personal direction became the natural product of circumstances.

With very little encouragement from Harvard, which was officially disposed to regard "English 47" as his personal foible, he developed the course by intimate, fatherly association with his students. Many of them went actively to work in the professional theater as soon as they graduated. Many others founded similar drama courses in other American universities. By the time Professor Baker moved to Yale in 1924, where the equipment seemed fabulous to him, he had fathered a great movement in college instruction, and many of "Baker's dozens" were pitching into Broadway as playwrights, scene designers, directors and critics.

No one can tell exactly how much his influence has improved the commercial theater. At the time when his pioneer course was materializing the commercial theater was developing into a forum of ideas on its own account. Although Professor Baker's students included a great many men and women who have made enviable reputations in the professional theater—Eugene O'Neill, Sidney Howard, Philip Barry, Robert Edmond Jones, Lee Simonson, and many others—he never believed that a man of the theater could be created by college instruction. The most a teacher can do, in his opinion, is to free talent that is already in existence, and his method of instruction was the ideal one of close personal association. Although he took great pride in the progress his students made, he stubbornly declined to regard them as his property.

It is, therefore, impossible to determine exactly the extent of his personal contribution to the professional theater. But this much is certain: the meagerly equipped course at Harvard raised the prestige of the theater enormously. In addition to the many students it sent directly into the theater, it has, in one way or another, graduated a host of educated theatergoers. Many college students in the United States who study drama adopt other professions, but they never lose their respect for the theater as an institution of great social potentialities. That is part of Professor Baker's contribution. In a thousand ways, both direct and indirect, "G. P.'s" fine character has influenced the theater for the best.—*The New York Times.*

REPORTS

EDUCATIONAL PLANNING AND COORDINATION IN CALIFORNIA

THE State Council on Educational Planning and Coordination, after studying for many months the major problems affecting the relationships between the schools of the public school system and the University of California, has presented jointly to the State Board of Education and the regents of the University of California, through the superintendent of public instruction and the president of the University of California, the following statement of basic principles and of the respective functions and programs of the junior college, the teachers college and the university, and urges that each of these boards give consideration to this statement in so far as it concerns the institutions under its jurisdiction.

Public opinion demands that educational opportunities for young men and women shall be maintained. The hope of democracy lies in the diffusion of knowledge and wisdom, and our educational institutions therefore are the country's best insurance for its future. Moreover, the present social and economic situation makes it increasingly important that the formal education of our youth should be continued over a considerable span of years. For our own progress, and even for our own safety, we must provide such educational programs in our junior colleges, state teachers colleges and university that each capable individual in our society can find in one or more of these institutions the guidance and training necessary to a well-balanced, full and abundant life.

Each of these institutions should, within its

own proper field and particularly within the span of its lower division courses, provide opportunity for general civic, social and personal education. Each should constitute itself a selective agency to discover the fields in which the individual student would be most likely to find success. Each institution should also be a center to stimulate adult education and promote a high type of community service. Each student attending any of these institutions should find in it an opportunity to deepen his cultural appreciation and increase his social understanding and efficiency.

JUNIOR COLLEGE

Functions: The junior college has a distinct and important field, and the years of forced unemployment and complexity of modern life are making its cultivation increasingly urgent. A considerable part of the graduates of our high schools, while disinclined toward the industrial trades, is not adapted to advanced academic studies. They should not go to a liberal arts college or university; they will not go to a trade school: yet some way must be found to meet their needs. They should have an opportunity to acquire some training which has economic value. In addition, they should have some understanding of the social, economic and industrial conditions of the modern world and of the background of their history, to make them adjustable to its rapidly changing conditions. Finally, they should be introduced to interests which will give meaning and value to their leisure time. Training for these three objectives would seem to be the major function of the junior college.

The second function of the junior college should be to provide for those young men and women whose interests are intellectual and who should have further academic training but who are unable to bear the expense of attendance at a four-year institution, or who may, in spite of general fitness for higher education, have certain deficiencies in high-school preparation that prevent their meeting university entrance requirements at the time of high-school graduation. This second function all junior colleges in the state now perform, too many of them this function only. In exercising this function the junior college should act as a selective agency. Thus, through an effective guidance program it should direct some of its students toward universities, some toward trade schools and the majority toward those vocational pursuits which constitute the larger part of our complex social organization and for which neither university, college nor trade-school training is a proper preparation.

The third function of the junior college should be to serve as cultural centers providing adult education for the people of their communities. Every junior college should be a regional institution offering opportunities in afternoon and evening classes for those who wish further cultural development or training along the line of their vocations, and drawing to the community through its own faculty and from outside sources the material of a more abundant life. Much of this work could be in cooperation with the University Extension Division.

Program: For the adequate performance of the functions herein described the following program is outlined for the junior college.

(1) Strong semi-professional and vocational curricula. These courses should be designed to give the student in two years sufficient skill to meet the demands of employers. They should be based on a careful study of the needs of different occupations and advice from skilled workers and employers.

(2) Curricula for life needs. These courses are to be planned for satisfactory completion in two years. They should cover in an exploratory way entire fields of thought, not merely sections of fields. The stage by stage method of presentation used by four-year colleges is not suitable because of lack of time to develop and correlate the different stages, and because the young people who go to junior colleges are as a rule not particularly interested in the more abstract phases of the regular academic program.

(3) One or more lower division curricula modeled after those of the higher institution to which the particular junior college sends most of its graduates who go farther with their education. Supplementary to these there should be a transfer curriculum designed to repair matriculation deficiencies and train students for success in lower division work.

(4) Adult education such as that now provided by several junior colleges.

TEACHERS COLLEGE

Functions: The function of the teachers colleges should be to prepare teachers for the elementary schools, for the intermediate or junior high schools and for such phases of supervision of instruction and administration in the elementary schools as do not involve courses on the graduate level. The training of young people for other professions and callings should be left to other institutions. The function of the teachers colleges should include, of course, the maintenance of a reasonably broad program of liberal arts courses in fields related to the work of the teacher in elementary and intermediate or junior high schools.

In addition to its legal objective and major function, the teachers college should perform in its region those functions of the junior college for which a part of its program is well adapted. The broadened academic preliminary training of teachers which is part of the modern program fits admirably into the junior college scheme, and thus it can meet the needs of persons residing near the teachers college who otherwise could not have as satisfactory opportunities as the college offers. Semi-professional, vocational and terminal courses should be offered in the teachers college when such offerings do not involve duplication with any nearby institution. If the teachers college fits the content and method of procedure of its courses to the ability of its students, as all colleges should, many of its lower division courses may well be the same for all students at that particular stage of their development.

As a distinctly minor function the teachers college should prepare students for special high-school credentials as at present defined, so long as there is no adequate provision for such preparation in public institutions training for the general secondary credential.

The teachers colleges should discourage the continued attendance beyond the junior college program of those who are not looking forward to teaching as a profession. Teachers colleges ought to be distinctly professional in character. Their courses must be "liberal," but this does not mean that they should become liberal arts colleges in the ordinary sense. For the number of students concerned the university is adequately prepared to meet the present needs of the state. Neither educational theory nor public policy would seem to justify the conversion of teachers colleges into liberal arts colleges in name or, to any great degree, in purpose.

Finally, the teachers college should serve as a center for adult education in its region. In particular, it should maintain adequate facilities for the continued improvement of elementary school and kindergarten teachers in neighboring communities. The latter should always be a vital and important part of its responsibility.

Program: The program of the teachers college is determined by their functions and objectives. No special statement would therefore seem to be necessary.

UNIVERSITY

Functions: The functions of the university are three and they are coordinate: (1) professional training; (2) development of the individual; (3) research in all matters that are of significance to the human race. The objective fulfilled by its exercise of these functions is threefold: the preparation of young men and women to minister professionally to the wants and needs of their fellowmen with ever-increasing skill and sympathy; the development of those who shall set up the intellectual and cultural standards toward which the community may aspire as a democratic ideal; and the cumulative increase of the sum total of human knowledge. In all its labors to these ends the purpose of the university is the general social welfare, not the competitive "success" of the individual. Accordingly, the number of persons trained for professions should, on the one hand, bear some relation to the needs of society and the ability of the individual to render service in the particular field he has chosen. On the other hand, the development of the individual for intelligent citizenship and the enrichment of his life need know no limit, save his capacity to profit by such training. There is a limitation here, however, and it is imposed, first, by the relatively small number of teachers of power, who are competent to deal critically with their respective fields, and to give stimulus and guidance; and, second, by the great expense of libraries, laboratories, museums and similar opportunities for the presentation to the student, under critical analysis, of the finest materials in

literature, art, music, drama, etc. It can not be denied that with respect to both these types of training the ability to profit thereby declines rapidly as the higher levels are reached, and as the cost rises.

Program: In order to meet such a comprehensive obligation a university must offer both college and professional curricula. The college curricula should be of two kinds: (1) those designed as backgrounds for the professions and (2) those designed to produce clearer thinking and nobler living. The nature of the professional curricula requires no description. As for the second group of curricula the university should not, ideally, be concerned with book subjects or elementary fundamentals, but in the present stage of our educational development these are necessary and must be included in its lower division. No other institution should be entrusted with the higher reaches of education, that is, graduate work or upper division work beyond that required for the preparation of elementary and junior high school teachers, because here adequate teaching and teaching materials can be obtained only in a few centers to which highly competent scholars are attracted by facilities of a high order, such as libraries, laboratories and the criticism of competent colleagues.

In addition to curricula, the university program must include research, for it has now become axiomatic in all intellectual circles that college and university teaching will soon become lifeless unless it is continually freshened by new knowledge. All that man has learned thus far about the world in which we live is very small compared to what still remains to be learned. There is no other center in which investigations concerning nature and man can be carried on so well as in a university. It is an indispensable condition of the life and progress of the state that proper provision for research be made in its university.

Finally, the university should, through cooperation with other educational agencies, extend its opportunities as widely as possible among persons of all ages, regardless of their geographical distribution. This extension of its opportunities should be accomplished through university extension divisions and also by a system of university scholarships that takes into account the geographic differentials now operating.

CHARLES A. ADAMS
ALLEN T. ARCHER
ANNIE FLORENCE BROWN
MRS. WILLIAM B. HAYES
ROBERT G. SPROUL
GURNEY E. NEWLIN
CHESTER H. ROWELL
WILLIAM G. WOOD
V. KERSEY

EDUCATIONAL RESEARCH AND STATISTICS

ANALYZING THE SUPERIOR COLLEGE STUDENT

IN any scientific approach to the problems raised by the superior student, careful description of individuals of high scholastic promise must precede the attempt to provide a suitable instructional situation for them. The question as to who the superior student is must first be answered. What characteristics serve to identify him most accurately? Are the differences between gifted students and those who do less acceptable work confined to scholastic activities or do they vary significantly in other respects?

I

The present report, which is based on an analysis of superior students at the University of Buffalo, furnishes at least tentative answers to these questions. The aim has been not only to determine the more salient characteristics of students who have established their superiority in college, in contrast to those who have clustered near the failure line, but also to test the effectiveness of various types of academic and personnel data in prognosticating college success.[1]

Cases were selected for this investigation on the basis of the junior college grade-point average, a quality index to work taken in the first two years of the arts college, and the study was also limited to men students. Those who entered college between 1926 and 1930 and were in the upper or lower quartiles of the grade-point

[1] The present study has been made possible by a General Education Board grant, and is reported with complete tabular results in Jones, E. S., and others, University of Buffalo Studies, Vol. IX, Ch. II and III, 1934.

distribution for this period (120 in each case) constituted the subjects for this analysis. The typical student in the superior group had approximately a straight B record, whereas a D record was characteristic of the lower-grade student. The superior students have also taken a significantly greater amount of work (10.32 S.E.).[2] during their freshman and sophomore years, especially in the social studies and languages.

II

The first group of comparisons, which were concerned with the high-school background of these students, disclosed a number of interesting and reliable differences. The superior students spent less time in high school, with almost a fifth of the group completing the course in less than the usual four years. They also graduated at a younger age, and tended to be drawn more largely from Buffalo public high schools rather than from the smaller suburban or rural schools.

The subjects which entered into their high-school programs were studied to determine whether extent of work influenced later achievement and whether acquaintance with certain areas of thought constituted more effective preparation for college than did other fields. While the superior group completed more units in high school (3.09 S.E.), the difference is not as pronounced as might be expected and is probably due to the fact that many superior students spent less than four years in high school. It is interesting to contrast these results with those for the college period where the time factor was held constant (two years) and where extensity of work proved to be a major differentiating factor.

The only significant variation in the subjects elected was the greater proportion of able students taking Latin III (3.57 S.E.). Modern European history and economics were taken somewhat more frequently by inferior students, and differences of about the same size occurred in advanced mathematics courses where superior students predominated.[3] Taken as a whole, the data on high-school elections indicate very little concerning the quality of subsequent work in college, and do not lend any substantial support to the theory that certain subjects prepare students for college better than others.

Two general measures of high-school achievement—the fifth of class in which the student graduated and his Regents' average—revealed how much the two groups varied in the quality of their preparatory work. The disparity in high-school quintile ranking was striking, with 81.7 per cent. of the superior group in the upper two fifths of their class as contrasted with 29.1 per cent. of the lower-grade students. High-school Regents' average, which reflects achievement in a number of subjects taken over several years, showed a difference in means amounting to 14.69 S.E. and the smallest degree of overlapping obtained for any measure considered in this study.

Among individual subjects, English literature and chemistry showed the greatest difference between the two groups in average achievement. The number of students taking these subjects was rather small, however, so that the most reliable differences were found in other fields—American history and English. The least differentiation was found for Spanish II, which, interestingly enough, was the only subject where the variation between the two groups can not be considered as statistically significant. These results show rather definitely that it is the student's reaction to the subject, the degree to which he can demonstrate his mastery of the field, rather than the character or number of subjects he has pursued in high school, which is intimately related to differential achievement in college.

Due possibly to more careful grading standards in Buffalo high schools the data did not reveal the wide difference in the predictive value of high-school classroom and Regents marks found by other investigators. Another ques-

[2] A difference may be classed as significant—greater than zero and favoring the group that now shows superiority—if it is at least three times the standard error of the difference. A ratio stated as 1 S.E. or greater indicates that the chances of a real difference are over 84 in 100, 2 S.E. or greater—over 98 chances in 100, and 3 S.E. or greater—practical certainty of a genuine difference.

[3] The subject itself may merely function as a highly selective device, so that students who have already established their superiority elect it. It makes little practical difference, however, whether the subject stands in a causal or concomitant relationship, so long as the presence of the subject in an applicant's program indicates high probability that he will do superior work in college.

tion which may be answered in a tentative fashion is whether the gaps perceptibly widen between these groups as they progress through high school. While there was a slight increase in mathematics, science and languages, there was no observable trend in the social studies and somewhat negative evidence in English. The constancy of these differences in central tendencies from year to year, as well as from subject to subject, apparently indicates that the grades are measuring some enduring quality in the students themselves, so that as far back as the analysis might be pushed, significant differences would be found in the achievement of these two groups. Other factors, such as personality differences in teachers and variations in subject-matter and instructional methods, would seem to be of minor importance as compared with the potentialities which the student brings to the course.

III

The American Council on Education Psychological Examination, given to these students at the time of entrance to college, ranks somewhat lower than the Iowa High School Content Examination in differentiating power, while both are inferior to the Regents' average. The extent of overlapping, as measured by the percentage of the inferior group who exceed the median score for superior students, was 21.2 for the A.C.E., as contrasted with 6.9 per cent. for the Iowa Examination and 2.3 per cent. for Regents' average. When separate sections of each test were analyzed, the mathematics division on both the A.C.E. and the Iowa Content Examination showed considerably more overlapping than other sections, apparently indicating that tests of mathematical abilities are of much less predictive power than other types for the highly verbal character of our present college courses.

IV

The University of Buffalo Personnel Blank, a six-page questionnaire filled out at the time of entrance, affords information on a number of non-scholastic factors which might be related to marked academic ability or disability. Judging from the results of other studies, very substantial reliability coefficients should be obtained for a blank as comprehensive as that used at Buffalo, and while the validity of certain items, such as self-ratings on emotional control and social attitudes, is undetermined, it is at least interesting to see what kinds of individuals superior and inferior students wish others to believe them to be.

A number of items concerned the parents and the home background of the student, and the trend on these points—showing a greater number of foreign-born parents among superior students, with the correlated factors of less formal schooling, lower socio-economic status and less use of English in the home—runs contrary to the findings of studies made at other colleges. The present results undoubtedly reflect local conditions, for not only do many of the best high-school students from American-born families go to the larger Eastern universities, but there is also a greater degree of selection among the children of immigrant parents because of the high tuition rate at Buffalo.

On self-ratings on emotional control the able students credited themselves with more persistence in problem-solving, greater disturbance after unkind remarks, and less ability in meeting new people and in participating in social activities. These points coincide with the studies of Thurstone and others who have found that the academically superior student tends to be somewhat more introverted than the average or inferior student. In an estimation of skills three differences exceeded 2 S.E.—on ability to write interestingly and on clerical aptitude, in both cases suggesting greater proficiency on the part of the superior group, and on athletic ability, where the inferior students show a higher rating.

Subject interests, as measured by best-liked subjects, other favorite subjects and courses especially disliked, revealed that interest in a field and quality of performance are not closely related factors. Except for a slightly greater interest in languages on the part of superior students, the elections of the two groups coincided to a remarkable degree. A rather extensive list of items on reading skills, study techniques and provisions for study in the home also yielded only a few differences worth noting, such as the more rapid reading rate of the better student, his keener memory and the greater amount of time he devotes to study. On sev-

eral items covering various approved study techniques the replies tended to favor the inferior group, so that differences in achievement can hardly be attributed to the possession of certain types of study habits, if these replies can be taken as a valid indication of how students actually study.

The most striking individual difference among vocational choices was the interest in teaching on the part of the superior group (5.35 S.E.). Research in science also elicited more interest from superior students, as did the legal profession and journalism. On medicine and dentistry the larger endorsement came from those doing low-grade college work. The average time of vocational decision was the same for both groups (about second-year high school), so that an early professional objective did not necessarily motivate students to higher scholastic attainment. Also uncertainty in choice did not militate against superior achievement in college, for gifted students listed a somewhat greater number of vocational interests. The able student attached greater importance to community service as a reason for entering a vocation, and also attributed more weight to the influence of teachers or advisers at schools, whereas the inferior student placed greater emphasis on the fact that his father or a close relative was engaged in the profession.

Studies of the recreational activities of these students showed more interest on the part of inferior students in fraternities, Scouts or Y. M. C. A. clubs and glee clubs, both in respect to membership and to leadership, as measured by the number of offices held, while the superior student more frequently engaged in publication staff activities, debate clubs and chess and scientific organizations. Parties and theaters appeared to have much less attraction for the able students. In enumerating hobbies, they revealed a keener interest in reading, nature study and the solution of mathematical problems or puzzles, in contrast to the lower achievement group which more frequently endorsed organized games, such as football and basketball, movies and cards. Not only did more students in the inferior group engage in athletics during the high-school period, but there was a reliably greater number of activities per student reported in this group.

A final section of the blank contained twenty-five statements on social, economic and religious problems, and the student was asked to express his own attitude on a five-point scale. Eight statements showed differences greater than 2 S.E., while ten others exceeded 1 S.E. Of these eighteen statements which tended to differentiate the groups, all but four indicated a greater degree of liberalism for the superior achievement group. There was also evidence that poorer students were more suggestible, tending to agree with the statement whether it was worded to favor the conservative or radical view.

V

Taken as a whole, the present study shows clearly that the superior college student has been the superior high-school student, so that adequate provision for his needs may well begin with advisement and guidance of individuals of marked ability on the high-school level. The trends found as to family background of these superior students would apparently indicate that, for the University of Buffalo population at least, academic superiority can not be attributed to a very favorable socio-economic situation, thus opening up an interesting problem as to the motivational factors involved in superior high-school and college performance. Finally, while the largest distinctions were found in factors closely allied to college work, enough differences were discovered in personality traits, social attitudes, recreational interests and vocational objectives to warrant the statement that the superior student has a different outlook upon life and organizes his thinking and activities to somewhat different ends than does the student of limited scholastic ability.

RUTH E. ECKERT
UNIVERSITY OF BUFFALO

NEW BOOKS IN EDUCATION

CAMPBELL, HAROLD G. *Thirty-sixth Annual Report of the Superintendent of Schools of the City of New York, 1933–34.* Part I: 323 pp. *Elementary Schools of the City of New York.* Pp. 241. *Youth in School and Industry: The Continuation Schools and Their Problems.* Pp. 301. Illustrated. Board of Education, New York City.

WALKER, ROBERT S. *The Beechblock Circus.* Pp. vi + 159. Association Press. $1.75.